

Armed Forces College of Medicine AFCM



Topography of Lower Limb Dr. Shereen Adel

INTENDED LEARNING OBJECTIVES (ILO)



By the end of this lecture the student will be able to:

- 1. Identify bones of thigh, leg & foot.
- 2. Identify different groups of muscles of thigh, gluteal region, leg & foot.
- 3. Enumerate nerves & vessels in the lower limb.

Key points



1. Bones & groups of muscles of lower limb

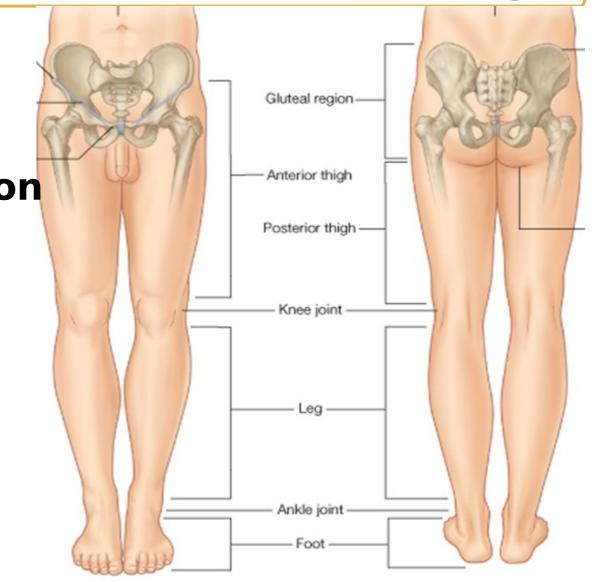
2. Nerves of lower limb

3. Vessels of lower limb.

Regions of Lower Limb

wer limb is formed of thigh, & foot.

uteal region is a posterior region re the back of the thigh.

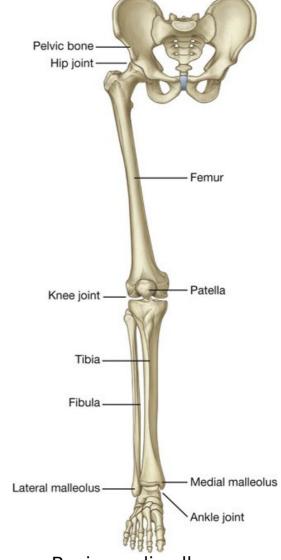


Bones & Joints of Lower Limb



Bones

- 1- Hip bone
- 2- Femur (thigh)
- 3- Tibia & fibula (
- 4- Bones of the fo
- Tarsal bones
 7 bones
- Metatarsals
- Phalanges



Frank H.Netter. 4th edition

Bones of Lower Limb

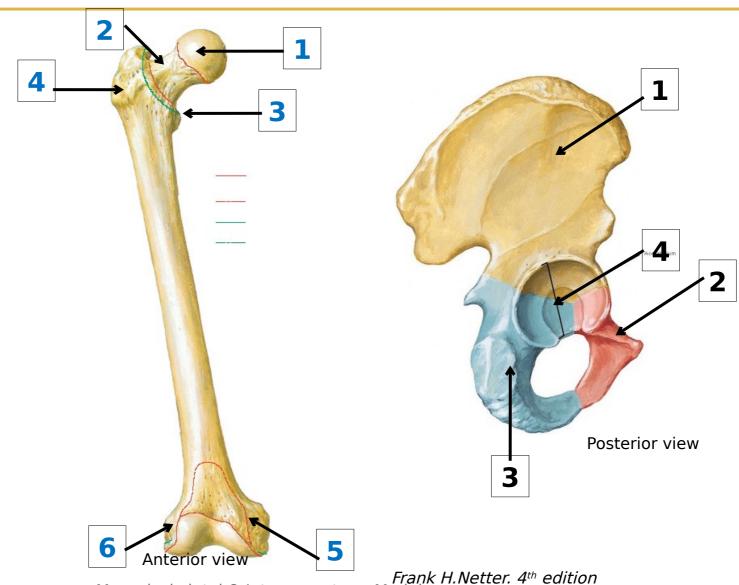


emur:

- Head
- Neck
- lesser trochanter
- Greater trochanter
- medial condyle
- lateral condyle

Hip bone:

- L- ileum
- 2- pubis
- 3- ischium
- 1- acetabulum



Bones of Lower Limb

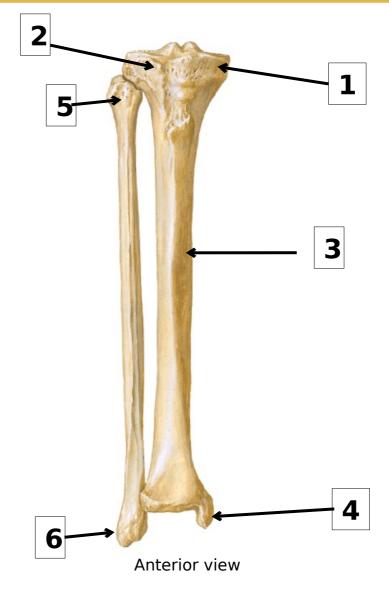


Tibia

- 1- Medial condyle
- 2- Lateral condyle
- 3- Shaft
- 4- Medial malleolus

ibula:

- Head of fibula
- Lateral malleolus

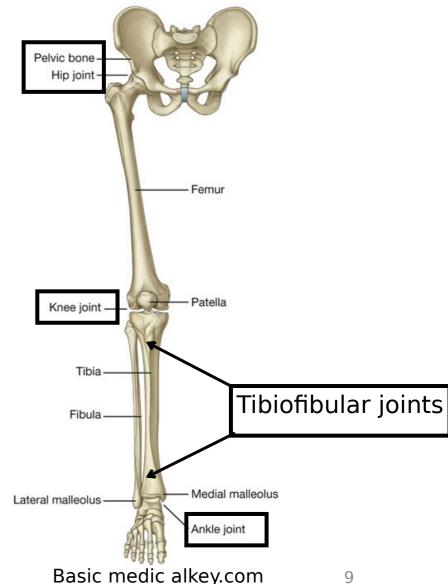


Bones & Joints of Lower Limb



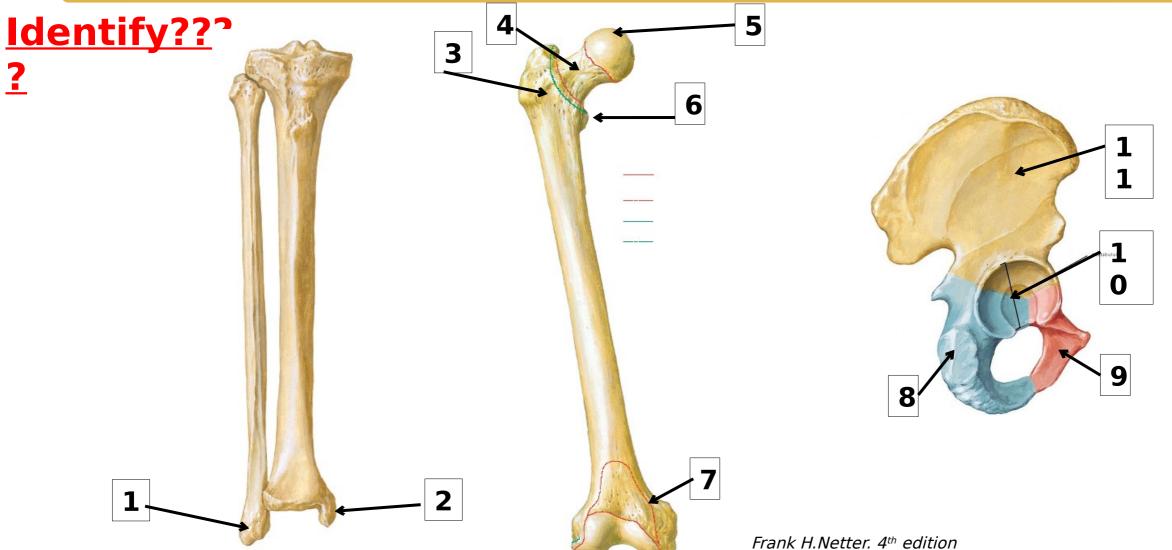
Joints:

- 1- Hip joint
- 2- Knee joint
- 3- Superior & inferior tibiofibular joints
- 4- Ankle joint
- 5- Joints of the foot



Lecture Quiz 1 (bones)

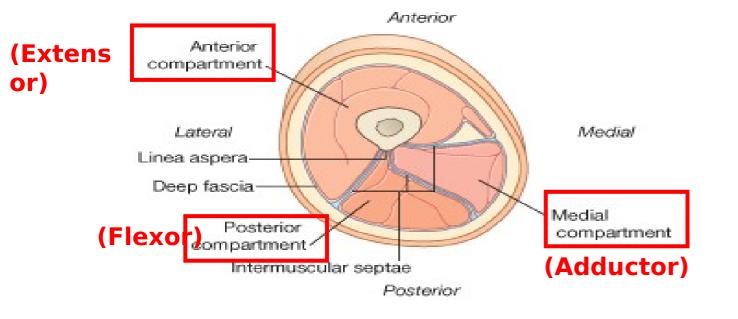


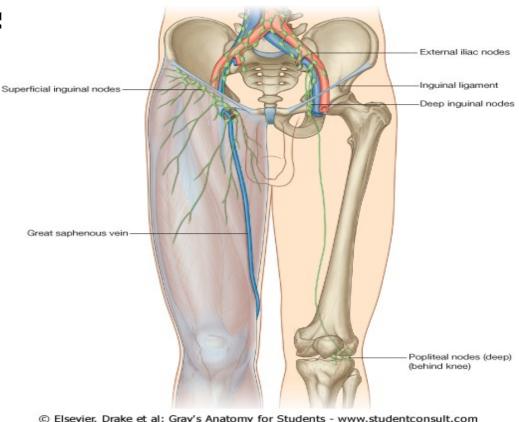


Fascia of the thigh



ep fascia of the thigh (Fascia lata): divide: thigh into three compartments intermuscular septa.





© Elsevier. Drake et al: Gray's Anatomy for Students - www.studentconsult.com

Muscles of the Lower Limb



Femoral triang

1. Muscles of the thigh

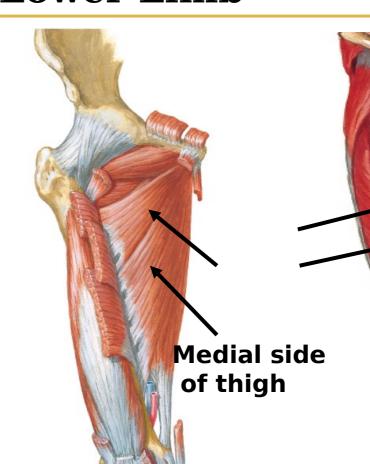
A) Anterior compartment Gluteal (extensors) (femoral tria muscles

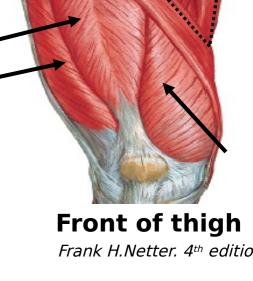
B) Medial compartment of thigh (adductors) (adductor canal)

Back of thigh C) Posterior compartme of thigh (flexor)

Popliteal Fossa

2- Gluteal muscles





Popliteal Fossa

Frank H. Netter. 4th edition back of leg

New Five Year Program

Frank H.Netter. 4th edition

Muscles of the Lower Limb



2. Muscles of the leg

Deep fascia of the leg divides it into 3

tments:



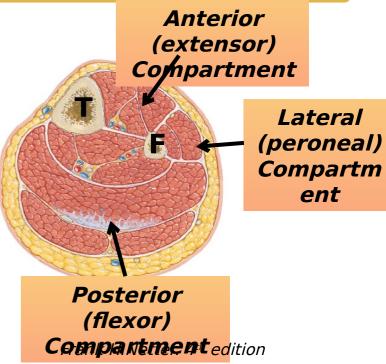
Frank H.Netter. 4th edition

Lateral (peroneal)
Compartment



Frank H.Netter. 4th edition

Posterior (flexor)



Frank H.Netter. 4th edition

Anterior (extensor)

ar Program

Muscles of the Lower Limb



3. Muscles of the foot (Dorsum & Sole)





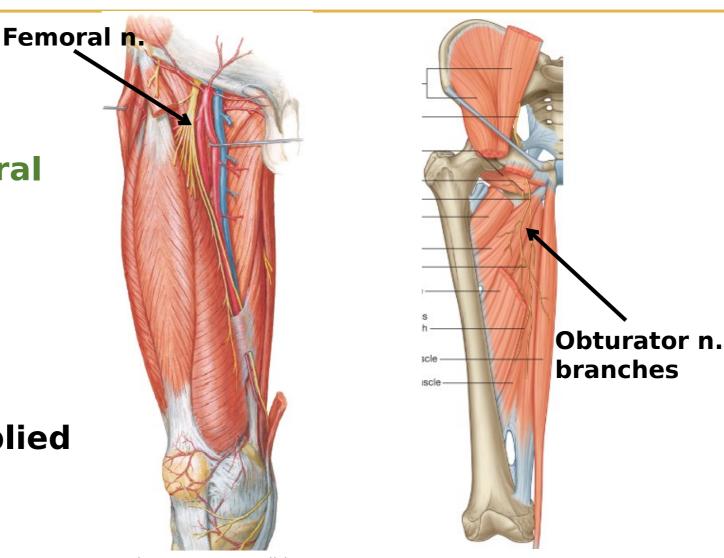
Nerves of the Lower Limb



Thigh

A) Anterior compartment is supplied by Femoral nerve (lumbar Plexus)

B) Medial compartment is supplied by Obturator nerve (lumbar Plexus)



Frank H.Netter. 4th edition© Elsevier. Drake et al: Gray's Anatomy for Students - www.studentconsult.com

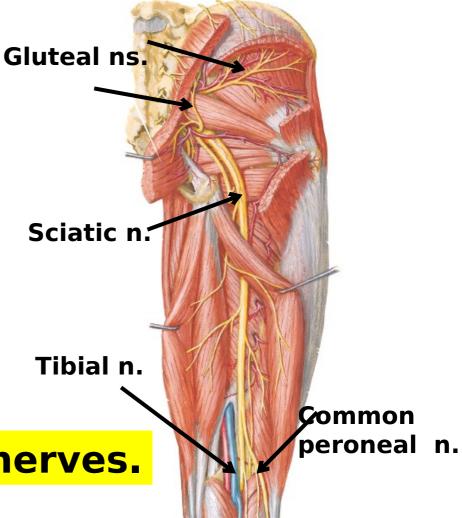
Nerves of the Lower Limb



C) Posterior compartment is supplied by Sciatic nerve (sacral plexus) it is the thickest nerve in the body.

Leg

Is supplied by <u>tibial nerve</u> & <u>common</u> <u>peroneal nerve</u> the terminal branches of sciatic nerve.



uteal muscles are supplied by gluteal nerves.

Lecture Quiz 2 (Nerves)



- Anterior compartment of thigh is supplied by nerve, while medial compartment is supplied by nerve.
- Sciatic nerve supplies.......compartment, gives two terminal branches.......&.....to supply the leg.

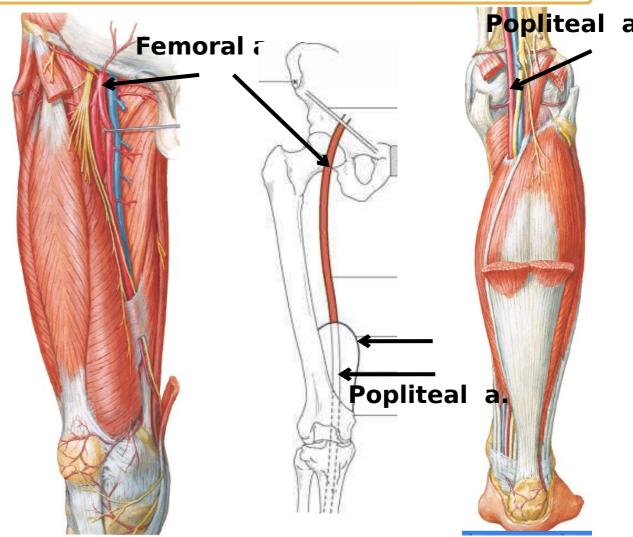


<u>emoral artery</u>

Begins as direct continuation of the external iliac artery.

Ends as popliteal artery in the popliteal fossa.

Popliteal artery ends in the popliteal fossa by Dividing into anterior & posterior tibial arteries to supply the leg & foot.



Frank H.Netter. 4th edition

Frank H.Netter. 4th edition



nches of the femoral artery:

erficial branches

<u>p branches:</u>

ofunda Femoris

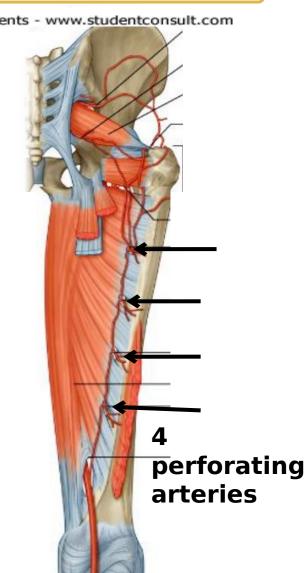
edial & lateral circumflex femoral arteries

our perforating arteries.

escending genicular (knee joint)

lateral circumflex femoral

Medial circumflex femoral



New Five Year Program

Frank H. Netter. 4th edition uloskeletal & Integumentar Frank H. Netter. 4th edition



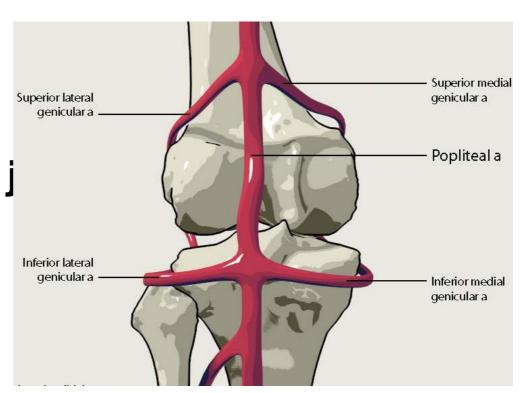
Popliteal artery

Branches:

- 1. Muscular
- 2. Cutaneous
- 3. Articular

(Genicular)

branches (5) Knee j



://www.google.com/search? q=femoral+popliteal+artery&source=lnms&tbm=isch&sa=X&ved=0ahUKEwiQ6faliqzhA hULJhoKHa5VCjEQ AUIDigB&biw=1366&bih=657#imgrc=8-9T oqVQl9p2M:

Musculoskeletal & Integumentary Module

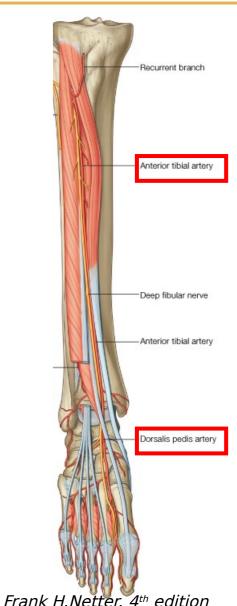


<u>Interior tibial artery</u>

• Origin: One of the 2 terminal br. of popliteal artery

Termination: Continues **as Dorsalis pedis** in front of ankle.

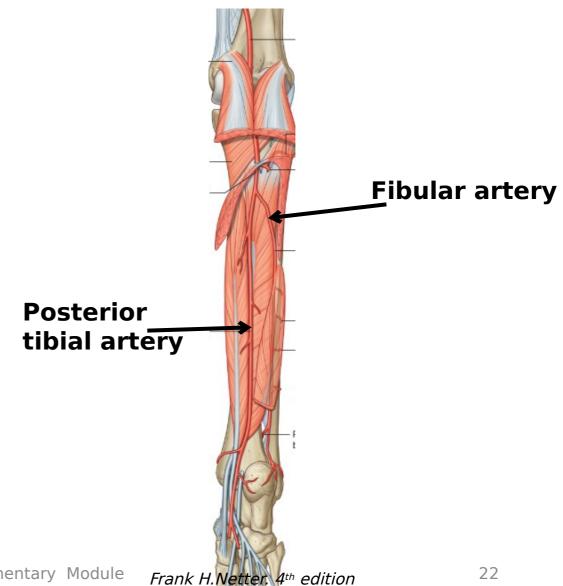
- Branches:
- 1. recurrent a. (knee)
- 2. Muscular
- 3. Malleolar a. (ankle)





<u>osterior tibial artery</u>

- **Origin:** The larger of the 2 terminal br. Of popliteal artery
- **Termination:** by dividing into medial & lateral plantar arteries
- **Branches:**
- 1. Fibular
- 2. Circumflex fibular (Knee)
- 3. Medial Malleolar & calnanean (ankle)





Obturator artery (internal iliac artery) Branches:

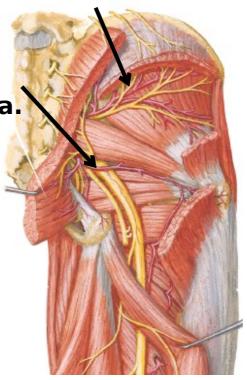
 Muscular branches to adductor muscles

 Acetabular branch to Inferior head of femur

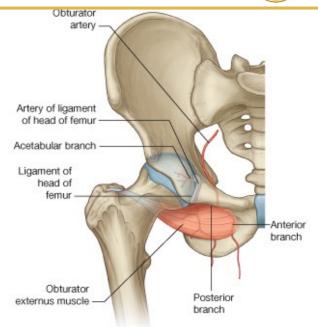
Superior & inferior gluteal arteries (internal iliac artery)

Branches:

 Muscular branches to gluteal muscles Superior Gluteal a.



Frank H. Netter. 4th edition



© Elsevier. Drake et al: Gray's Anatomy for Students - www.studentconsult.com

Lecture Quiz 3 (Vessels)



ral artery ends as	which ends	by dividing in
&	to supply the	leg & foot.

erior tibial artery continue as......tie.....between the t

erior tibial artery ends by two.....arteries.

Veins of the Lower Limb



Veins of the upper limb include:

Deep Veins:

Usually accompany the arteries & their branches.

Superficial Veins:

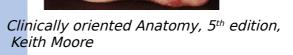
Great & small saphenous veins & doi

venous

Perforating veins: connecting superficial & deep veins, allowing blood to flow in one direction only from superficial to deep veins.

In case of incompetent perforating veins blood pass from deep to superficial veins (Varicose Veins)

Great saphenous vein



Dorsal venous arch

small saphenous vein

Frank H.Netter. 4th edition

Veins of the Lower Limb



Great Saphenous vein:

Begin medial end of dorsal venous arch

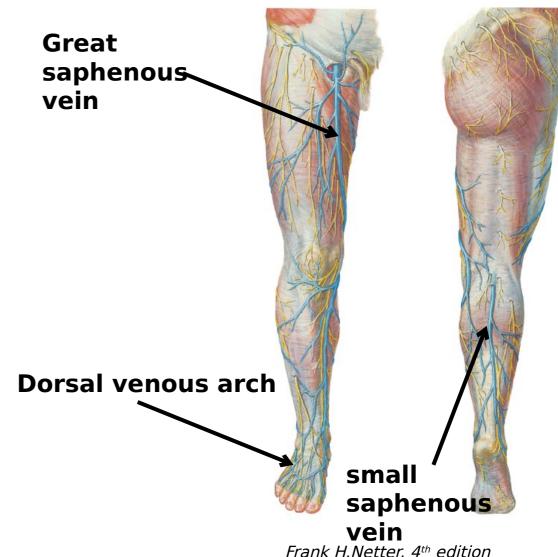
Ends in the **femoral vein**

Small Saphenous vein:

Begin lateral end of dorsal venous

arch

Ends in the **popliteal vein**



Frank H.Netter. 4th edition

Lecture Quiz 3 (Vessels)



• Great saphenous vein ends in......while small

Saphenous vein ends in.....

SUGGESTED TEXTBOOKS



1. Frank H. Netter Atlas of Human Anatomy, 4th edition.

Summary



- Names of bones of thigh, leg & foot with important general features.
- Different regions of lower limb.
- Different groups of muscles of thigh, gluteal region &leg.
- Main vessels & nerves in the lower limb.



Thank You